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RAW SEQUENCE LISTING

DATE: 11/28/2001

PATENT APPLICATION: US/09/922,683

TIME: 10:38:37

Input Set : N:\Crf3\RULE60\09922683.txt Output Set: N:\CRF3\11282001\1922683.raw

## SEQUENCE LISTING

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(1) GENERAL INFORMATION:
      4
      6
             (i) APPLICANT: DECKER, Heinrich
            (ii) TITLE OF INVENTION: ISOLATION OF THE BIOSYNTHESIS GENES FOR
      8
                                      PSEUDO-OLIGOSACCHARIDES FROM STREPTOMYCES GLAUCESCENS
      9
                                      GLA O AND THEIR USE
     10
           (iii) NUMBER OF SEQUENCES
     12
            (iv) CORRESPONDENCE ADDRESS
     14
     15
                  (A) ADDRESSEE: FOLEY & LARDNER
     16
                  (B) STREET: 3000 K Street, N.W.
     17
                  (C) CITY: Washington
                                                                     (D) STATE: D.C.
     18
                  (E) COUNTRY: U.S.A.
     19
                  (F) ZIP: 20007-5109
     20
             (V) COMPUTER READABLE FORM:
     22
     23
                  (A) MEDIUM TYPE: Floppy disk
                  (B) COMPUTER: IBM PC compatible
     24
                  (C) OPERATING SYSTEM: PC-DOS/MS-DOS
     25
                  (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
     26
            (vi) CURRENT APPLICATION DATA:
     28
                  (A) APPLICATION NUMBER: US/09/922,683
C--> 29
                  (B) FILING DATE: 07-Aug-2001
C-->30
     31
                  (C) CLASSIFICATION:
           (vii) PRIOR APPLICATION DATA:
     37
                  (A) APPLICATION NUMBER: 09/194,905
     34
                  (B) FILING DATE: 1999-12-01
     35
                  (A) APPLICATION NUMBER: DE 19622783.6
     38
                  (B) FILING DATE: 07-JUN-1996
     39
          (viii) ATTORNEY/AGENT INFORMATION:
     41
     42
                  (A) NAME: Granados, Patricia D.
                  (B) REGISTRATION NUMBER: 33,683
     43
                  (C) REFERENCE/DOCKET NUMBER: 026083/0193
     44
            (ix) TELECOMMUNICATION INFORMATION:
     46
                  (A) TELEPHONE: (202) 672-5300
     47
     48
                  (B) TELEFAX: (202) 672-5399
        (2) INFORMATION FOR SEQ ID NO: 1:
     51
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     5.3
     54
                  (A) LENGTH: 22 base pairs
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                  (C) STRANDEDNESS: single
                  (D) TOPOLOGY: linear
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     59
            (ii) MOLECULE TYPE: other nucleic acid
                  (A) DESCRIPTION: /desc = "Primer"
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     67 CSGGSGSSGC SGGSTTCATS GG
     69 (2) INFORMATION FOR SEQ ID NO: 2:
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71

(i) SEQUENCE CHARACTERISTICS:

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PATENT APPLICATION: US/09/922,683

DATE: 11/28/2001 TIME: 10:38:37

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             (D) TOPOLOGY: linear
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       (ii) MOLECULE TYPE: other nucleic acid
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       (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
83
                                                                            24
85 GGGWVCTGGY VSGGSCCGTA GTTG
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             (C) STRANDEDNESS: single
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             (D) TOPOLOGY: linear
       (ii) MOLECULE TYPE: DNA (genomic)
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        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
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                                                                             60
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                                                                            120
104 CCCCGGCGGC GTCGCGGTGA CCGTCCTCGA CAAACTCACC TACGCCGGCA GCCTCGCCCG
                                                                            180
106 CCTGCACGCG GTGCGTGACC ATCCCGGCCT CACCTTCGTC CAGGGCGACG TGTGCGACAC
                                                                            240
108 CGCGCTCGTC GACACGCTGG CCGCGCGGCA CGACGACATC GTGCACTTCG CGGCCGAGTC
                                                                            300
110 GCACGTCGAC CGCTCCATCA CCGACAGCGG TGCCTTCACC CGCACCAACG TGCTGGGCAC
112 CCAGGTCCTG CTCGACGCCG CGCTCCGCCA CGGTGTGCGC ACCCTCGTGC ACGTCTCCAC
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114 CGACGAGGTG TACGGCTCCC TCCCGCACGG GGCCGCCGCG GAGAGCGACC CCCTGCTCCC
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116 GACCTCGCCG TACGCGGCGT CGAAGGCGGC CTCGGACCTC ATGGCGCTCG CCCACCACCG
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118 CACCCACGGC CTGGACGTCC GGGTGACCCG CTGTTCGAAC AACTACGGCC CGCACCAGTT
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120 CCCGGG
                                                                            546
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        (ii) MOLECULE TYPE: DNA (genomic)
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        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
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139 GTGGCTGACG TGCATGGCCA GCGCGAGCAG GTCGCCCGAC GCCTTGGAGG TGGCATAGGG
                                                                            120
141 GCTGTTGGGG CGCAGCGGCT CGTCCTCCGT CCACGACCCC GTCTCCAGCG AGCCGTAGAC
                                                                            180
143 CTCGTCGGTG GACACCTGCA CGAAGGGGGC CACGCCGTGC CGCAGGGCCG CGTCGAGGAG
                                                                            240
145 TGTCTGCGTG CCGCCGGCGT TGGTCCGCAC GAACGCGGCG GCATCGAGCA GCGAGCGGTC
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147 CACGTGCGAC TCGGCGGCGA GGTGCACGAC CTGGTCCTGG CCGGCCATGA CCCGGTCGAC
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149 CAGGTCCGCG TCGCAGATGT CGCCGTGGAC GAAGCGCAGC CGGGGGTGGT CGCGGACCGG
                                                                            420
                                                                            480
151 GTCGAGGTTG GCGAGGTTGC CGGCGTAGCT CAGGGCGTCG AGCACGGTGA CGACGGCGTC
153 GGGCGGCCCG TCCGGACCGA GGAGGGTGCG GACGTAGTGC GAGCCCATGA ACCCCGCCGC
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155 C
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              (B) TYPE: amino acid
162
              (C) STRANDEDNESS:
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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/922,683

DATE: 11/28/2001 TIME: 10:38:37

163		(D	) TO	POTIO	3Y :	linea	ar									
165	(ii)	MOL	•													
170	, ,	SEQ			-	-		eo ti	OM C	. 5.						
172	, ,	Ala						-			λνα	Thr	LOU	LOU	Clv	Dro
		Ата	GIY	FILE	ме с 5	GIY	261	птэ	тут	10	Alg	1111	пеа	neu	15	FIU
173	1	01	D	D	_	. 1 -	77- 3	**- 1	m h		T	N ~ ~	21-	T 0		(T)
175	Asp	Gly	Pro		Asp	Ala	Val	val		Val	Leu	ASP	Ala		ser	LAI.
176		~ 3		20		_	_	_	25		_	_		30	_	_
178	Ala	Gly		Leu	Ala	Asn	Leu	_	Pro	Val	Arg	Asp		Pro	Arg	Leu
179			35				_	40		_			45			_
181	Arg	Phe	Val	His	Gly	Asp		Cys	Asp	Ala	Asp		Val	Asp	Arq	Val
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185	65					70					75					80
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188					85					90					95	
190	Gly	Thr	Gln	Thr	Leu	Leu	Asp	Ala	Ala	Leu	Arg	His	Gly	Val	Ala	Pro
191	-			100					105					110		
193	Ph∈	Val	Gln	Val	Ser	Thr	Asp	Glu	Val	Tyr	Gly	Ser	Leu	Glu	Thr	Gly
194			115				•	120		-	-		125			_
196	Ser	Trp	Thr	Glu	Asp	Glu	Pro		Ara	Pro	Asn	Ser		Tvr	Ala	Thr
197	001	130					135		5			140		- 1		
199	Ser	Lys	Δla	Ser	Glv	Asp		Len	Δla	Len	Δla		His	Va 1	Ser	His
200	145	_	nia	DCI	0.1	150	пси	пси	III	Deu	155	1100		, 41	DCI	160
202		Leu	λen	Va 1	λrα	-	Thr	Ara	Cvc	Sor		λen	ጥህጉ	Clv	Pro	
203	Gry	пец	изр	vui	165	110	1111	пту	CYS	170	11011	71511	- y -	Ory	175	- <i>y</i> -
										1/0						
	Clr	Uic	Dro	C117												
205	Gln	His	Pro	-												
205 206				180		T.D. NY	). <i>6</i>									
205 206 208	(2) INFO	RMAT	ION 1	180 FOR S	SEQ I											
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205 206 208 210 211 212 213 214	(2) INFO (i) (ii) (xi)	RMAT SEQI (A (B (C (D MOL	ION 1 UENCI ) LEI ) TYI ) STI ) TOI ECULI	180 FOR S E CHA NGTH PE: 6 RANDI POLOGE TYI E DES	SEQ I ARACT : 181 amino EDNES GY: I PE: I	TERIS  l am  c ac  SS:  lines  prote	STICS ino a id ar ein N: SI	S: acids EQ II	ON C							
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205 208 210 211 212 213 214 216 221 223 224 226 227 229	(2) INFO (i) (ii) (xi) Pro 1 Ser	RMAT SEQI (A (B (C (D MOL SEQI Gly	ION I UENCI ) LEI ) TYI ) TOI ECULI UENCI Gly	180 FOR S E CHA NGTH PE: 6 RANDI POLOGE E TYI E DES Ala Ala 20	SEQ I ARACT : 183 amino EDNES GY: I PE: P SCRII Gly 5 Pro	TERIS  am: coac: SS: linea prote PTION Phe Gly	STICS ino a id  ar ein N: SI Ile	S: acids EQ II Gly Val	O NO Ser Ala 25	Ala 10 Val	Thr	Val	Leu	Asp	Leu 15 Lys	Leu
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205 208 210 211 212 213 214 216 221 223 224 226 227 229 230 232 233 235 236	(2) INFO (ii) (iii) (xi) Pro 1 Ser Thr Gly Thr 65	RMAT SEQI (A (B (C (D MOL SEQI Gly Pro Tyr Leu 50 Leu	ION IUENCI ) LEN ) TYI ) STI ) TOI ECULI UENCI Gly Gly Ala 35 Thr	180 FOR S FOR S E CHA NGTH PE: 6 RANDI POLOGE E TYI E DES Ala Ala 20 Gly Phe Ala	SEQ TARACT : 18: amino EDNES GY: 1 SCRII Gly 5 Pro Ser Val Arg	TERIS  I am: D ac: SS: linea prote PTION Phe Gly Leu Gln His 70	STICS ino a ino a ar ein N: SI Ile Gly Ala Gly 55 Asp	S: acids EQ II Gly Val Arg 40 Asp	NO Ser Ala 25 Leu Val	Ala 10 Val His Cys	Thr Ala Asp His 75	Val Val Thr 60 Phe	Leu Arg 45 Ala	Asp 30 Asp Leu Ala	Leu 15 Lys His Val Glu	Leu Pro Asp Ser 80
205 206 208 210 211 212 213 214 216 221 223 224 226 227 229 230 232 233 235 236 238	(2) INFO (ii) (iii) (xi) Pro 1 Ser Thr Gly Thr 65	RMAT SEQI (A (B (C (D MOL SEQI Gly Pro Tyr Leu 50	ION IUENCI ) LEN ) TYI ) STI ) TOI ECULI UENCI Gly Gly Ala 35 Thr	180 FOR S FOR S E CHA NGTH PE: 6 RANDI POLOGE E TYI E DES Ala Ala 20 Gly Phe Ala	SEQ DARACTE 183 Amino EDNES GY: DESCRIP GLY 5 Pro Ser Val Arg	TERIS  I am: D ac: SS: linea prote PTION Phe Gly Leu Gln His 70	STICS ino a ino a ar ein N: SI Ile Gly Ala Gly 55 Asp	S: acids EQ II Gly Val Arg 40 Asp	NO Ser Ala 25 Leu Val	Ala 10 Val His Cys	Thr Ala Asp His 75	Val Val Thr 60 Phe	Leu Arg 45 Ala	Asp 30 Asp Leu Ala	Leu 15 Lys His Val Glu Thr	Leu Pro Asp Ser 80
205 208 210 211 212 213 214 216 221 223 224 226 227 229 230 232 233 235 236 238 239	(2) INFO (ii) (ii) (xi) Pro 1 Ser Thr Gly Thr 65 His	RMAT SEQI (A (B (C (D MOL SEQI Gly Pro Tyr Leu 50 Leu Val	ION IUENCI ) LEN ) TYI ) TOI ECULI UENCI Gly Ala 35 Thr Ala Asp	180 FOR S E CHA NGTH PE: 8 RANDI POLOGE E TYI E DES Ala Ala 20 Gly Phe Ala Arg	SEQ I ARACT : 183 amino EDNES GY: I SCRIII Gly 5 Pro Ser Val Arg Ser 85	TERIS  I am: D ac: SS: linea prote PTION Phe Gly Leu Gln His 70 Ile	STICS ino a id  ar ein N: SI Ile Gly Ala Gly 55 Asp	EQ III Gly Val Arg 40 Asp Asp	NO Ser Ala 25 Leu Val Ile Ser	Ala 10 Val His Cys Val Gly 90	Thr Ala Asp His 75 Ala	Val Val Thr 60 Phe	Leu Arg 45 Ala Ala Thr	Asp 30 Asp Leu Ala	Leu 15 Lys His Val Glu Thr 95	Leu Pro Asp Ser 80 Asn
205 206 208 210 211 212 213 214 216 221 223 224 226 227 229 230 232 233 235 236 238	(2) INFO (ii) (ii) (xi) Pro 1 Ser Thr Gly Thr 65 His	RMAT SEQI (A (B (C (D MOL SEQI Gly Pro Tyr Leu 50 Leu	ION IUENCI ) LEN ) TYI ) TOI ECULI UENCI Gly Ala 35 Thr Ala Asp	180 FOR S E CHA NGTH PE: 8 RANDI POLOGE E TYI E DES Ala Ala 20 Gly Phe Ala Arg	SEQ I ARACT : 183 amino EDNES GY: I SCRIII Gly 5 Pro Ser Val Arg Ser 85	TERIS  I am: D ac: SS: linea prote PTION Phe Gly Leu Gln His 70 Ile	STICS ino a id  ar ein N: SI Ile Gly Ala Gly 55 Asp	EQ III Gly Val Arg 40 Asp Asp	NO Ser Ala 25 Leu Val Ile Ser	Ala 10 Val His Cys Val Gly 90	Thr Ala Asp His 75 Ala	Val Val Thr 60 Phe	Leu Arg 45 Ala Ala Thr	Asp 30 Asp Leu Ala	Leu 15 Lys His Val Glu Thr 95	Leu Pro Asp Ser 80 Asn

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244	Arg T	hr Leu	Val 1	His	Val	Ser	Thr	Asp	Glu	Val	Tyr	Gly	Ser	Leu	Pro	
245	•	115					120					125				
247	His G	ly Ala	Ala	Ala	Glu	Ser	Asp	Pro	Leu	Leu	Pro	Thr	Ser	Pro	Tyr	
248		3 <b>0</b>				135	•				140					
250	Ala A	la Ser	Lys 2	Ala	Ala	Ser	Asp	Leu	Met	Ala	Leu	Ala	His	His	Arg	
251	145		-		150		_			155					160	
253	Thr H	is Gly	Leu i	Asp	Val	Arq	Val	Thr	Arq	Cys	Ser	Asn	Asn	Tyr	Gly	
254		•		165		_			170	-				175	_	
256	Pro H	is Gln	Phe :	Pro												
257			180													
259	(2) INFORM	ATION F	OR S	EQ I	D NO	): 7:	;									
261	• •	EQUENCE														
262	` '	(A) LEN	IGTH:	685	4 ba	se p	pairs	3								
263		(B) TYP	E: n	ucle	ic a	cid										
264		(C) STR					Le									
265		(D) TOP				_										
267	(ii) M	OLECULE	TYP	E: D	NA (	gend	omic)	)								
272	(xi) S	EQUENCE	DES	CRIP	OIT	I: SI	EQ II	NO:	7:							
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276	CGCGGCGATG	TCGGCG	ATGT	CGT	'GGC'I	GGT	GAGO	CACCA	ACG (	GTGGT	GCCC	CA G	TTCC	CGGTC	;	120
278	GGCGCGGTTG	ACCAGO	CGGC	GCA	CCGC	CGTC	CTTC	CAGCA	ACC I	ATGTO	CGAGO	C C	GATC	STGG	;	180
280	CTCGTCCCAG	AACAGO	ACGG	CCG	GGTC	CGTG	CAGO	CAGGO	CTC (	GCCGC	CGATO	CT C	GGCG	CGCAT		240
282	GCGCTGTCCG	AGGCTG	AGCT	GCC	GCAC	CGGG	GGTG	GACC	CCC I	AGCGC	CGTCC	A TO	GTCG?	AGGAC	3	300
284	GTCCCGGAAC	AGGGCG	AGGT	TGC	GCCC	GTA	GACC	CGGTC	CCG (	GGGAI	GTC	T A	GATG	CGGCC	3	360
286	CAGGATGCGG	AAGGAG	TCGG	GTA	CCGF	ACAG	GTCC	CCACC	CAG	AGCT	GCTO	GC G	CTGG	CCGA	A	420
288	GACGACGCCG	ATCGTG	CGGG	CGT	TGC	GCTG	CCGC	STGC	CGG '	TAGG	CTC	CA GO	CCCG	GCGA(	2	480
290	CGTGCAGCGG	CCGGAG	GTGG	GGG	TCAT	GAT	GCCC	GTC	AGC A	ATCTI	GATO	CG TO	GGTC	SACT	7	540
292	GCCGGCTCCG	TTGGCG	CCGA	TGT	'AGGC	CGGT	CTTC	CGTGC	CCG	GCCGC	TATO	CT C	GAAG	GAGAC	2	600
	GTCGTCGACG															660
296	CAGGCCGGGC	TCGCGT	TCGG	CCA	GCCC	GAA	CTCC	CTTGA	ACG Z	AGGT	TTC	G C	CACGA	ATCAC	3	720
298	GCGATCACCC	GCTCGA	CGGC	CGT	CTC	CAGC	AGG	CGCAC	GC (	CCTC	STCGA	AG CZ	AGCG(	CCTCC	3	780
300	TCGAGGGTGA	ACGGCG	GTGC	CAG	CCGC	CAGG	ATG	GGC	CGC	CCAG	GAG	GT G	CGCA	GCCCC	7	840
	AGGTCGAGGG															900
304	GCGTCGGTGA	CGAACT	CCAG	GCC	CCAC	CAGC	AGTO	CCGAC	GC (	CGCGI	ACC	rg go	CCGA	GCTGC	3	960
306	GGGAAGCGGG	ACTCCA	GGGC	GCG	CAGO	CCGC	TCCT	GGA	GA (	GCTCC	GCCG <i>I</i>	AG G	ACGC	GCAC	3	1020
	CGGTCGATCA															1080
	AGTGGGTTGC															1140
312	GCTTCCGCGC	GTCCGG	CCAG	CAC	GGCC	SAAG	GGG	AATC	CGC	TCGCC	GTG	CC C	TTGG	ACAG	2	1200
	ATCGCCAGGT															1260
	CCGCCGGTGA															1320
	ATCCGCTCCC															1380
	AAGACCAGGG															1440
	CGCACGTCGC															1500
	GCCAGCACGC															1560
	GCGCCCATGG															1620
	GCGGCGGTCG															1680
	AAGGCGTAGG															1740
	CGGTCCGGCG															1800
334	TCGACGACCT	CCGGGT	GCCC	GTG	GCCC	CAGT	GACT	rggg1	rga	GGGT(	CCCG	GC C	GCGA	AGTCO	3	1860



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			GTCGGTCAGA				1920
			GGAGGCGCCC				1980
340	TGCTGTGTCT	GCCGTAAGCC	TGTCATCGCT	GCCTCTGCTC	GTCGGACCGG	CTGACGCGAT	2040
342	CGCCGGCGAA	CTGCGTTGTG	GCGCACCACG	GTTGGGGCGG	CTCGGCGCTG	AGTCAAACAC	2100
344	TTGAACACAC	ACCGCTGCAA	GAGTTTGCGG	GTTGTTTCAG	AAAGTTGTTG	CGAGCGGCCC	2160
			CGTGCTTACG				2220
348	CCTGTGAGAA	CAAGCCCGCA	GACCGACCCG	CTCCCGCGGA	GGCCGAGGTG	AAGGCCCTGG	2280
350	TCCTGGCAGG	TGGAACCGGC	AGCAGACTGA	GGCCGTTCAC	CCACACCGCC	GCCAAGCAGC	2340
352	TGCTCCCCAT	CGCCAACAAG	CCCGTGCTCT	TCTACGCGCT	GGAGTCCCTC	GCCGCGGCGG	2400
354	GTGTCCGGGA	GGCCGGCGTC	GTCGTGGGCG	CGTACGGCCG	GGAGATCCGC	GAACTCACCG	2460
			TTACGCATCA				2520
358	TCGCGCACGC	GGTGCGCATC	GCCCGCGGCT	TCCTGGGCGA	CGACGACTTC	CTGCTGTACC	2580
360	TGGGGGACAA	CTACCTGCCC	CAGGGCGTCA	CCGACTTCGC	CCGCCAATCG	GCCGCCGATC	2640
362	CCGCGGCGGC	CCGGCTGCTG	CTCACCCCGG	TCGCGGACCC	GTCCGCCTTC	GGCGTCGCGG	2700
364	AGGTCGACGC	GGACGGGAAC	GTGCTGCGCT	TGGAGGAGAA	ACCCGACGTC	CCGCGCAGCT	2760
366	CGCTCGCGCT	CATCGGCGTG	TACGCCTTCA	GCCCGGCCGT	CCACGAGGCG	GTACGGGCCA	2820
368	TCACCCCCTC	CGCCCGCGGC	GAGCTGGAGA	TCACCCACGC	CGTGCAGTGG	ATGATCGACC	2880
			GAGACCACCA				2940
			CGTCACGTCC				3000
			CTGGTCGGCC				3060
376	${\tt GGGGGTCACA}$	CGTGGTGGGC	CCGGTGGTGA	TCGGCGCGGG	TGCCGTCGTC	AGCAACTCCA	3120
			ATCGGGGAGG				3180
380	ACTCCGTCCT	GCTGCGCGGC	GCCCAGGTCG	AGGGGGCGTC	CCGCATCGAG	GCGTCCCTCA	3240
			GGCCCGGCCC				3300
384	TCGGCGACCA	CAGCAAGGTG	TATCTCACCC	CATGACCACG	ACCATCCTCG	TCACCGGCGG	3360
386	AGCGGGCTTC	ATTCGCTCCG	CCTACGTCCG	CCGGCTCCTG	TCGCCCGGGG	CCCCCGGCGG	3420
			ACAAACTCAC				3480
			TCACCTTCGT				3540
			ACGACGACAT				3600
			GTGCCTTCAC				3660
			ACGGTGTGCG				3720
			GGGCCGCCGC				3780
			CCTCGGACCT				3840
			GCTGTTCGAA				3900
			CCAGCCTCCT				3960
			GGCTGCACGT				4020
			GAGAGATCTA				4080
410	CCTGGAGCTC	ACGCACCGGT	TGCTCGCACT	GTGCGGCGCG	GGCCCGGAGC	GCATCGTCCA	4140
	UU 2 U U		ACGACCGGCG	-			4200
			GCACCGACTT				4260
			GGTGGCGTCC				4320
			CCGGCACACC				4380
			GCCGCCCCGC				4440
			TTCGGTGCGC				4500
			CCCCATCGCC				4560
			CGGCGAGTCG				4620
			CGCGGCCCGC				4680
			CAGGTCGATC				4740
432	AGGGAGAACA	GCGAGTGCTG	CACGAGCTCC	TCGGACTCCC	GCGCCGACAC	TCCCAGGTGC	4800

VERIFICATION SUMMARY

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Input Set : N:\Crf3\RULE60\09922683.txt
Output Set: N:\CRF3\11282001\1922683.raw

L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]

L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]